

Undergraduate Courses offered by Centre of Buddhist Studies in 2023-2024

ELECTIVE COURSE
(OPEN TO ALL FACULTIES)

BSTC2048 Buddhism and Science: View and Meditation in the Light of Physics and Neuroscience

Offering Semester	1 st Semester
Lecturer	Prof. Dr. Klaus-Dieter Mathes
Office	Room 4.04, The Jockey Club Tower, Centennial Campus
Tel	
Email	
Day of the week	Monday 12:30 – 14:20
Assessment	100% coursework
Class Venue	CPD 2.42

Course Description

Buddhism has been repeatedly highlighted as being a “science of mind” rather than a religion. Puzzled by surprising research results (such as the superposition of quantum states or entanglement), physicists with philosophical questions have turned to Buddhism in search of new models of reality finding striking parallels between a “quantum interconnectedness” and Nāgārjuna’s dependent arising and emptiness. Common ground was also discovered through the constant corrective of repeatable experiments (physics) and first person experience of standardized meditation techniques (Buddhism). Physical and Buddhist models of reality thus share the principle of being valid only until refuted through valid cognition.

Neuroscientists also struggle with the problem of correlating the “third-person” data of an experiment to the respective “first-person” experiences, and have also taken an interest in Buddhism. A significant result of the dialogue between Buddhists and neuroscientists are popular applications such as “Healthy Minds,” which largely make use of experiments conducted on meditation practitioners in laboratories. What has eventually been labelled “the Mindful Revolution,” brings meditation beyond traditional Buddhist contexts to benefit people from all walks of life.

No prior knowledge of Buddhism or specialized knowledge of science is required.

Course Student Learning Outcomes:

Upon successfully completing this course, students will be able to:

- demonstrate an understanding of the dialogue between Buddhism and science through a critical assessment of the relevant theoretical frameworks
- assess the possible challenges in interactions between Buddhists and scientists in the light of their worldviews and social contexts
- draw on primary and secondary source materials about the dialogue between Buddhism and science
- understand basic scientific models and experimental data relating to the physical world and the mind against a backdrop of Buddhist philosophy and contemplative practices

Assignments and Grading Scale

- Class participation 35%

Students must have read the assigned readings carefully in order to engage in class discussions and debates.

Students download and use the *Healthy Minds Program App* and perform the program's daily meditation for about 15 minutes. This experimental component will enable students to integrate their insights from this app into class discussions.

https://hminnovations.org/meditation-app?gclid=EAAlaIQobChMIga2e0uPr6wIVYRitBh2wAw1aEAAYASAAEgK0HfD_BwE

- Presentation of the final group projects and write-up 50 %. Students form groups to engage in a deeper discussion of the units explored throughout the course. It is expected that key methodological and theoretical concepts, which are relevant for the dialogue and exchange between Buddhism and science are used. Own experiences gathered with the help of the Healthy Mind App should also be taken into account. A written version must be submitted before the presentation for review and feedback by the instructor.
- Group Presentations 15 %
Students are required to present in groups, the readings for a particular class

Changes to the Syllabus

Depending on progress, we may make changes to the schedule of our readings. This will be announced at that the relevant time in class and on moodle.

Tentative Class Schedule

Week 1: Buddhism and Science: On the Nature of the Dialogue

Reading:

Francisca Cho and Richard K. Squier. "Introduction" (selection). *In Religion and Science in the Mirror of Buddhism*. New York and London: Routledge, 2016, pp. 1–24.

Week 2: Buddhism and Science: On the Nature of the Dialogue, continued

Reading: Wallace, B. Alan: *The Taboo of Subjectivity: Toward a New Science of Consciousness*. Oxford: Oxford University Press, 2000, pp. 123-175

Week 3: Madhyamaka and Quantum Physics (Copenhagen Interpretation)

Reading:

Carlo Rovelli: *Helgoland*. Dublin: Penguin Random House, 2021, pp. 117-131

Video:

David Tong: "The Real Building Blocks of the Universe." Cambridge Lecture Feb 15, 2017.

https://www.youtube.com/watch?v=zNVQfWC_evg

Week 4: Dependent Arising and Quantum Interconnectedness (Non local forms of causality)

Reading:

Mathes, Klaus-Dieter: "Liberation through Realizing the Emptiness of Dependent Arising: A Modern Interpretation of the Buddhist "Beyond" in the Light of Quantum Physics." In: *Experiencing the Beyond: Intercultural Approaches*. Ed. by Gert Melville and Carlos Ruta (Challenges of Life: Essays on Philosophical and Cultural Anthropology 4). Berlin/Boston: Walter de Gruyter GmbH, 198-211

Walleczek, Jan and Grössing, Gerhard 2016

"Is the World Local or Nonlocal? Towards an Emergent Quantum Mechanics in the 21st Century." arXiv:1603.02862v1 [quant-ph] 9Mar2016

(<http://arxiv.org/pdf/1603.02862v1.pdf>, last visited Sept. 5, 2016)

Week 5: Big Bang, SpaceTime, and Buddhist Cosmologies

Reading:

Ricard, Matthieu and Trinh Xuan Thuan: *The Quantum and the Lotus: A Journey to the Frontiers where Science and Buddhism Meet*. New York: Random House, 2001, 23-59 & 127-140.

Video:

Lee Smolin: *How can Space and Time be the Same Thing?*

<https://www.youtube.com/watch?v=QOAcQCFNtbo>

Week 6: Mind-Matter Interactions: Generalized Quantum Theory

Reading:

Jahn, Robert G. and Dunne, Brenda J.: “On the Quantum Mechanics of Consciousness, with Application to Anomalous Phenomena.” Reprinted from *Foundations of Physics*. Bruges (Belgium): St. Catherine Press, vol. 16, no. 8 (1986), 721-737.

Moritz Dechamps: “Mind-Matter Interactions and Their Reproducibility” Inaugural-Dissertation zur Erlangung des Doktorgrades der Philosophie an der Ludwig-Maximilians-Universität München. 2019, p. 1 – 15

Video:

Herbert Benson: *The Relaxation Revolution: Enhancing Health Through Mind Body Healing*.

https://www.youtube.com/watch?v=KZ7JfC3_Zgc

Week 7: Mind — The Missing Component in Contemporary Theories of Everything

Reading:

Atmanspacher, H. (2012). “Dual-Aspect Monism à la Pauli and Jung.” *MJournal of Consciousness Studies* 19(9-10), 1-19.

Video:

Buddhist Monks’ Meditation in a Lab for Dr. Berbert Benson

<https://www.facebook.com/watch/?v=492552928192172>

Related article: “Tibetan Monks Can Change their Metabolism” by NEWS on September 18, 2019.

<https://mindmatters.ai/2019/09/tibetan-monks-can-change-their-metabolism/>

Week 8: From Third Person to First Person Perspectives: In Search of the Neuronal Correlates of Consciousness

Reading:

Ricard, Matthieu and Singer, Wolf: *Beyond the Self: Conversations between Buddhism and Neuroscience*. Cambridge: The MIT Press, 2017, p. 137-160

Trinity College Dublin: *New Research suggests our brains use quantum computation*.
<https://phys.org/news/2022-10-brains-quantum.html>

Week 9:

Meditation and Neuroplasticity

Reading:

Begley, Sharon: *Train your Mind, Change your Brain*. New York: Ballantine Books, 2007, Chapter 6

Videos:

Mingyur Rinpoche and Neural Synchrony in Meditation

https://www.youtube.com/watch?v=5C_GOUvNZtk

Herbert Benson - The Relaxation Revolution:
Enhancing Health Through Mind Body Healing

https://www.youtube.com/watch?v=KZ7JfC3_Zgc

Week 10: The Nature of Consciousness

Ricard, Matthieu and Singer, Wolf: *Beyond the Self: Conversations between Buddhism and Neuroscience*. Cambridge: The MIT Press, 2017, p. 211-262

Week 11: Cognitive Science and the Illusion of a Self

Reading:

Westerhoff, Jan: *The Non-Existence of the Real World*. Oxford: Oxford University Press, 2020, p. 84-92 & 131-141

Week 12: Mindfulness-Based Stress Reduction (MBSR) and the “Mindful Revolution”

Reading:

Pickert, Kate: “The Mindful Revolution.” *Time Magazine*, February 3, 2014, 42–46.

Kabat-Zinn, Jon. “Some Reflections on the Origins of MBSR, Skillful Means, and the Trouble with Maps.” *Contemporary Buddhism* 12, 1 (2011): 281–306.

Purser, Ron: “The Mindfulness Conspiracy.” *The Guardian*, June 14, 2019.
<https://www.theguardian.com/lifeandstyle/2019/jun/14/the-mindfulness-conspiracycapitalist-spirituality>

Note:

Plagiarism:

Plagiarism is a serious academic offence. The University upholds the principle that plagiarism in any form is unacceptable and any student found plagiarizing is liable to disciplinary action in addition to failing the assessment concerned. Please read the following webpage on "plagiarism" for details:

<http://arts.hku.hk/current-students/undergraduate/assessment/plagiarism>

Faculty Grade Expectations: http://arts.hku.hk/grade_expectations.pdf